

Use it or lose it? Get it back with exercise

You already know that smoking is bad for your health, but did you know that the benefits of switching from a sedentary lifestyle to a moderate workout schedule compare to the health benefits that result from stopping smoking? Is this enough motivation for you to get moving?

Strength, endurance, agility, flexibility, balance, reaction time, speed, coordination, range of motion-- these qualities all diminish to some degree as we age, and they are all associated with the natural decline of muscle mass that increases as you pass age 40. In order to preserve functional fitness and retard the loss of muscle mass, it is vital for each individual to be as physically active as they can manage. You (like the author) might be concerned with being able to lift your suitcase into the overhead compartment on an airplane. Or you may want to be able to walk up subway steps without getting too winded, or to carry groceries or a toddler more comfortably. What are the activities of daily living that are important for you to manage?

People stop being active for a variety of reasons, including physical or emotional illness, injury, pain, fear of falling, family obligations, work demands, travel, and even because of harsh weather. Extended breaks from being active can significantly reduce fitness, but the good news is that if you were physically active and then became sedentary, you should be able to regain fitness more quickly than someone who has always been sedentary. Your recovery will be facilitated by “muscle memory”, the long-lasting structural changes that occur in muscles and brain that enable you to repeat familiar movements with a minimum of conscious thought, like brushing your teeth or walking-- or regular exercise.

How you lose it

- **Aerobic capacity** gained through exercise is mostly lost within two to four weeks of inactivity. As the size and strength of muscles decreases, exercise becomes more tiring and muscle soreness becomes increasingly likely.
- **VO2 max** measures the capacity of the heart and lungs to take in oxygen and convert it into energy. VO2 max decreases naturally with age, and that decline is steeper if you are not active. Most studies indicate a complete reversal of VO2 max after long-term inactivity when regular workouts are resumed.

- **Bones** are most dense at around age 30. Density declines with age and the risk of fractures increases significantly by age 50. If you sit for most of the day, your bone density will decline faster than if you move around regularly. Weight-bearing exercise has been shown to play a significant role in both building strong bones when we are young and in stimulating bone growth as we age.
- **Blood volume:** Exercise increases the heart's ability to pump blood. Blood carries oxygen and glucose, the main sources of energy, so more blood flowing to the cells in your brain and body gives you more energy. And as a bonus, blood also carries the materials to produce proteins that build new muscle cells.
- **Blood glucose:** Your blood glucose level typically rises after a meal. If blood glucose levels remain elevated you have an increased risk of heart disease, diabetes, and weight gain, but physical activity converts glucose in the blood into energy, and the amount of glucose that remains is reduced. A study that followed adults on an eight-month-long regimen of strength and aerobic training confirmed that regular exercise lowered their blood glucose levels, but about half of the subjects lost that benefit within 14 days of quitting exercise.
- **Blood pressure:** Elevated blood pressure is commonly a result of stiffening of the blood vessels. A recent study found a healthy decrease in participants' blood pressure during a six-month period of training, but after just two weeks of inactivity their blood pressure rose as the total amount of blood circulating in the body decreased and blood vessels began to stiffen. After three sedentary months, even endurance athletes experience increased arterial stiffness that becomes progressively worse if they remain inactive.

How you get it back

" Start where you are. Use what you have. Do what you can. "

Arthur Ashe

Can you walk four city blocks (400 meters) in less than 15 minutes? If you are a healthy adult under age 40, that should be easy for you. But that was the working definition of mobility used in a study of older adults who were dealing with physical frailty and disability. It is important for you to evaluate *your* individual fitness level appropriately so that you can set

reasonable goals that allow you to measure your improvement. This link contains several easy ways to evaluate your fitness level: <https://www.mayoclinic.org/healthy-lifestyle/fitness/in-depth/fitness/art-20046433?p=1>

Benefits and a reduced risk of illness will follow from even small amounts of exercise. A recent article in the journal *Sports Medicine* reported that as little as a two-to five-minute walk after a meal had a positive effect on heart health and a significant impact on insulin and blood sugar levels. And a recent study in the journal *Circulation* reported that adding just 500 steps a day resulted in a 14 percent reduction in the risk of heart disease, stroke, and heart failure. Although more exercise generally yields greater benefits, when the long-term health of “weekend warriors” (people who only exercised on weekends) was compared with the long-term health of people who had higher levels of activity spread over more days, there were substantial and comparable health benefits that resulted even from being moderately active on only a couple of days a week.

Pilates exercises are an excellent way to maintain strength, balance, range of motion, and flexibility- and to maximize fitness at any age. Pilates is recommended by many orthopedists for people who are resuming activity after recovering from an injury, and it’s a good way for anyone to get in shape because of its many options that adapt the movements to your ability level.

The general rule is to start resuming activity slowly, and gradually build up towards your fitness goal. Always tweak your routine based on how your body feels. Always make sure you perform any movement safely and correctly. Your strength will increase first, and it will take a bit longer to regain your endurance. Scheduling your activity is a good way to start. Make an appointment with yourself to take a walk or sign up for a Pilates session, and then keep that appointment.

Keep in mind that regular exercise makes you feel good. When you exert the effort to exercise, chemical messengers in the brain reward you with a good feeling and a sense of accomplishment, and those feelings will motivate you to repeat the pleasurable activity. So just get moving; you will feel good, and your health will improve.